

527 Rec'd PCT/PTC 03 NOV 2000

FORM PTO-1390 REV. 5-93		US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEYS DOCKET NUMBER <b>P00,1814</b>
<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>		U.S.APPLICATION NO. (if known, see 37 CFR 1.5) <b>09/674755</b>	
INTERNATIONAL APPLICATION NO. <b>PCT/DE99/01295</b>	INTERNATIONAL FILING DATE <b>03 May 1999</b>	PRIORITY DATE CLAIMED <b>08 May 1998</b>	
TITLE OF INVENTION <b>BROADBAND COMMUNICATION SYSTEM</b>			
APPLICANT(S) FOR DO/EO/US <b>Manfred Tasto and Kurt Aretz</b>			
Applicant herewith submits to the United States /Designated/Elected Office (DO/EO/US) the following items and other information:			
<p>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay. 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination will be made by the 19th month from the earliest claimed priority date.</p> <p>5. <input checked="" type="checkbox"/> A copy of International Application as filed (35 U.S.C. 371(c)(2)) a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</p> <p>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3)) a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). <b>Executed</b></p> <p>10. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>			
<b>Items 11. to 16. below concern other document(s) or information included:</b>			
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98; ( <b>PTO 1449, Prior Art, Search Report</b> ).			
12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included. <b>(SEE ATTACHED ENVELOPE)</b>			
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.			
14. <input type="checkbox"/> A substitute specification.			
15. <input type="checkbox"/> A change of power of attorney and/or address letter.			
16. <input checked="" type="checkbox"/> Other items or information: a. <input checked="" type="checkbox"/> Submission of Drawings - <b>One sheet of Drawings</b> b. <input checked="" type="checkbox"/> EXPRESS MAIL #EJ077704156US dated November 3, 2000.			

S. APPLICATION NO. (if known, see 37 C.F.R. 1.5)		INTERNATIONAL APPLICATION NO PCT/DE99/01295		ATTORNEY'S DOCKET NUMBER P00,1814	
<b>BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5)):</b>					
Search Report has been prepared by the EPO or JPO ..... \$860.00					
International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) ..... \$670.00					
No international preliminary examination fee paid to USPTO (37 C.F.R. 1.482) but international search fee paid to USPTO (37 C.F.R. 1.445(a)(2)) ..... \$760.00					
Neither international preliminary examination fee (37 C.F.R. 1.482) nor international search fee (37 C.F.R. 1.445(a)(2)) paid to USPTO ..... \$970.00					
International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) ..... \$ 96.00					
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b> \$860.00					
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. 1.492(e)). \$ 0					
Claims	Number Filed	Number Extra	Rate		
Total Claims	23 - 20 = 3		X \$ 18.00	\$54.00	
Independent Claims	3 - 3 = 0		X \$ 80.00	\$ 0	
Multiple Dependent Claims			\$270.00 +	\$	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$914.00	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 C.F.R. 1.9, 1.27, 1.28) \$					
<b>SUBTOTAL =</b> \$914.00					
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)). \$					
<b>TOTAL NATIONAL FEE =</b> \$914.00					
Fee for recording the enclosed assignment (37 C.F.R. 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). \$40.00 per property +					
<b>TOTAL FEES ENCLOSED =</b> \$914.00					
				Amount to be refunded	\$
				charged	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>914.00</u> to cover the above fees is enclosed.					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>501519</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 C.F.R. 1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: <u>Brett A. Valiquet</u> <b>SIGNATURE</b>					
Schiff Hardin & Waite Patent Department 71st Floor Sears Tower Chicago, Illinois 60606					
Brett A. Valiquet <b>NAME</b>					
27,841 <b>Registration Number</b>					

09/674755

526 Rec'd PCT/PTO 03 NOV 2000

-1-

BOX PCT

IN THE UNITED STATES ELECTED OFFICE  
OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
UNDER THE PATENT COOPERATION TREATY-CHAPTER II

5

PRELIMINARY AMENDMENT

APPLICANT: MANFRED TASTO ET AL

DOCKET NO: P00,1814

SERIAL NO:

GROUP ART UNIT:

EXAMINER:

10 INTERNATIONAL APPLICATION NO: PCT/DE99/01295

INTERNATIONAL FILING DATE: 03 May 1999

INVENTION: "BROADBAND COMMUNICATION SYSTEM"

Assistant Commissioner for Patents,  
Washington, D.C. 20231

15 Sir:

As a Preliminary Amendment for entry into the National Stage for the above-identified PCT application, the following is submitted:

IN THE ABSTRACT:

20 Please amend the Abstract as follows:

Delete "ABSTRACT" and substitute --ABSTRACT OF THE DISCLOSURE--.

Please delete the title after "ABSTRACT".

At line 3, delete "A" and substitute --In--, after "system" insert ---, delete "comprises.

At line 4, delete "(1)" and substitute --are provided--.

5 At line 5, delete "(2)".

At line 7, delete "(1)".

At line 8, delete "fashioned" and substitute --designed-.

10 At line 9, delete "(1)", delete "means" and substitute --unit--, delete "(5)".

At line 10, before "cordless" insert --the--.

At line 11, delete "(1)", before "communication" insert --a--, delete "(2)".

15 At line 12, delete "The invention enables a" and substitute --A--, after "transmission" insert --is thus enabled--.

At line 13, delete "(2)".

At line 14, delete "outlay" and substitute --expense--.

20 Delete Line 15.

IN THE SPECIFICATION:

Please amend the specification as follows (where specification amendments are to the annex pages (substitute pages) that has been so indicated):

25 On page 1, before the title, insert

    --S P E C I F I C A T I O N

    TITLE--

after the title, as a separate line, insert

DRAFTS & DRAWINGS

**--BACKGROUND OF THE INVENTION--.**

On substitute page 1, at line 3, delete "(1)".

On substitute page 1, at line 8, delete "requires [sic]" and substitute --require--.

5 On substitute page 1, at line 30, delete "To that end" and substitute --For that purpose--.

On substitute page 1a, at line 1, delete "fashioned" and substitute --designed-

10 On substitute page 1a, before line 5, insert the following title:

**--SUMMARY OF THE INVENTION--.**

On substitute page 1a, at line 7, delete "outlay" and substitute --expense--.

15 On substitute page 1a, at line 8, delete "the" and substitute --a--.

On substitute page 1a, at line 8, delete "disclosed".

On substitute page 1a, at the last line, delete "in claim 1".

20 On page 2, at line 2, after "equipment" insert --unit--.

On page 2, at line 3, delete "fashioned" and substitute --designed--.

25 On page 2, at line 4, delete "Developments and advantageous".

On page 2, delete line 5.

On page 2, at line 8, delete "outlay" and substitute --expense--.

30 On page 2, at line 19, delete "ensue" and substitute --occurs--.

On page 2, at line 30, before "infrared" insert  
--an--.

On page 3, at line 1, delete "means (5)" and  
substitute --unit 5--.

5 On page 3, at line 3, delete "stations, the control  
means" and substitute --stations. The control unit--.

On page 3, at line 6, before "what" insert --in--.

On page 3, at line 8, insert --,-- after "factory".

10 On page 3, at line 10, delete "ca" and substitute  
--can--.

On page 3, at line 14, delete "outlay" and  
substitute --expense--.

15 On page 3, at line 19, delete "drawing, where the  
sole" and substitute --drawing--, delete "Figure 1 shows  
an".

On page 3, before line 20, insert the following  
heading:

**--BRIEF DESCRIPTION OF THE DRAWING--**

20 On page 3, at line 20, before "exemplary" insert  
--Figure 1 shows an--, delete "inventive", after "system"  
insert --of the invention--.

On page 3, before line 21, insert the following  
heading:

**--DESCRIPTION OF THE PREFERRED EMBODIMENTS--**

25 On page 3, at line 22, before "pointed" insert  
--be--.

On page 3, at line 29, delete "thereby" and  
substitute --therefore--.

On page 3, at the last line, delete "a matter of".

30 On page 4, at line 4, delete ",respectively,".

On page 4, at line 8, after "infrared" insert  
--radiation--.

On page 4, at line 14, delete "ensues" and  
substitute --occurs--.

5 On page 4, at line 15, delete "outlay" and  
substitute --expense--, delete "inventive", after  
"system" insert --of the invention--.

On page 4, at line 17, delete "means" and  
substitute --unit--, before "bus" insert --a--.

10 On page 4, at line 19, delete "means" and  
substitute --unit--.

On page 4, at line 21, delete "means" and  
substitute --unit--, before "external" insert --the--, delete  
"ensue" and substitute --occur--.

15 On page 4, at line 23, delete "ensue" and  
substitute --occur--.

On page 4, at line 26, delete "fashioned" and  
substitute --designed--.

On page 4, at line 28, delete ",respectively,".

20 On page 4, at line 29, delete ", respectively,".

On page 5, at line 3, delete "inventive", after  
"system" insert --of the invention--.

On page 5, at line 5, delete "outlay" and  
substitute --expense--.

25 On page 5, as the last paragraph, insert the  
following paragraph:

30 --Although various minor changes and modifications  
might be proposed by those skilled in the art, it will  
be understood that our wish is to include within the  
claims of the patent warranted hereon all such changes

and modifications as reasonably come within our contribution to the art.--

IN THE CLAIMS:

On page 6 of the claims, delete "PATENT CLAIMS" and  
5 substitute --WE CLAIM AS OUR INVENTION--.

Please cancel claims 1-16 without prejudice.

Please substitute claims 17-38 as follows:

17. A broadband communication system, comprising:  
10 a plurality of cordless communication devices  
connected to one another for cordless communication with  
at least one communication terminal within a  
communication cell; and  
the cordless communication devices being connected  
15 to a power supply network and designed for broadband data  
transmission via the power supply network.

18. The communication system according to claim  
17 wherein the cordless communication devices are  
designed for cordless data transmission via radio.

20 19. The communication system according to claim  
17 wherein the cordless communication devices are  
designed for cordless data transmission via infrared  
radiation.

25 20. The communication system according to claim  
19 wherein the data transmission between the cordless  
communication devices and the communication terminal

occurs with amplitude modulation of an infrared base band.

21. The communication system according to claim  
17 wherein the data transmission between the cordless  
5 communication device and the communication terminal  
occurs by higher-grade digital modulation.

22. The communication system according to claim  
19 wherein the infrared radiation has a wavelength from  
800 nm to 100 nm.

10 23. The communication system according to claim  
19 wherein the infrared radiation has a wavelength from  
1200 nm to 1400 nm.

15 24. The communication system according to claim  
19 wherein a source of the infrared radiation comprises  
a surface-emitting semiconductor laser.

25. The communication system according to claim  
17 further comprising a control unit for controlling data  
communication between the cordless communication devices.

20 26. The communication system according to claim  
25 wherein the control unit produces a connection to an  
external communication network.

27. The communication system according to claim  
26 wherein the connection to the external communication

network is produced with at least one of a coaxial cable and an optical fiber cable.

28. The communication system according to claim  
26 wherein the connection to the external communication  
5 network occurs via a radio connection.

29. The communication system according to claim  
17 wherein the cordless communication devices are  
designed for data transmission via at least one of a 230  
volt and a 110 volt power supply network.

10 30. The communication system according to claim  
17 wherein the communication cell is formed by a room in  
a building.

15 31. The communication system according to claim  
17 wherein the cordless communication devices are  
designed to be screwed into an incandescent bulb socket.

32. The communication system according to claim  
31 wherein at least one of the cordless communication  
devices comprises its own incandescent bulb socket.

20 33. A broadband communication system, comprising:  
at least first and second cordless communication  
devices in respective first and second communication  
cells separated from each other by a wall, the first and  
second communication devices being connected to each  
other via a power supply network permitting broadband

DRAFTS/44592950

data transmission via the power supply network between  
the first and second cordless communication devices; and  
at least one communication terminal within at least  
one of said first and second communication cells which  
5 communicates with at least one of the first and second  
cordless communication devices depending upon which cell  
the at least one cordless communication device is located  
in.

10 34. The system according to claim 33 wherein at  
least one of the cordless communication devices is  
plugged into a power outlet of the power supply network.

15 35. The system according to claim 33 wherein at  
least one of the cordless communication devices is  
screwed into a light bulb receptacle of the power supply  
network.

36. The system according to claim 33 wherein the  
broadband data transmission occurs with the at least one  
communication terminal at a frequency greater than 10  
GHz.

20 37. A method for broadband communication,  
comprising the steps of:

providing at least first and second cordless  
communication devices located in respective first and  
second communication cells;

connecting the first and second cordless communication devices together via a power supply network which also supplies power to the first and second communication devices;

5 making broadband data transmissions between the first and second cordless communication devices via the power supply network; and

10 communicating with at least one communication terminal located within at least one of said first and second communication cells in a cordless fashion via the respective cordless communication device located in the respective communication cell.

15 38. The method according to claim 37 including the step of communicating in cordless fashion with the at least one communication terminal at a frequency greater than 100 GHz.

20 39. The method according to claim 37 including the step of communicating between the cordless communication devices at a frequency of greater than 10 GHz via the power supply network.

REMARKS

The specification and abstract have been amended in accordance with U.S. practice.

25 New claims 17 through 32 generally correspond to the PCT prosecuted claims but are drawn in accordance with U. S. format. Also, additional independent and dependent claims 33-39 have been provided.

Docket No. 2562412350

-11-

An Information Disclosure Statement is enclosed.

Respectfully submitted,

 (Reg. No. 27,841)

Brett A. Valiquet  
Schiff Hardin & Waite  
Patent Department  
71st Floor Sears Tower  
Chicago, Illinois 60606  
(312) 258-5786  
Attorneys for Applicants

5

10

OAG ESTATE PLANNING & TRUSTS

**BROADBAND COMMUNICATION SYSTEM**

The invention is directed to a broadband communication system with a plurality of cordless communication devices (1) connected to one another for cordless communication with at least one communication terminal device within a  
5 communication cell.

Demanding communication services such as the transmission of video data, for example for television transmission, video playback or picture telephony, requires [sic] high data rates on the order of magnitude of 10 megabits per second. The bandwidths currently employed in cordless telephones (DECT) or, respectively,  
10 in mobile radio telephony (for example, according to GSM standard) at carrier frequencies of approximately 900 MHz through approximately 2000 MHz are therefore no longer adequate for a cordless data transmission over short distances, for example in the house and garden area or in office buildings or the like. On the contrary, higher frequencies are needed, for example above 10 GHz.

15 The informational brochure "Innovationskolleg Kommunikationssysteme" of the Institute for Communications Technology of the Technical University Dresden proposes that radio frequencies in the region of 60 GHz be employed for cordless digital broadband data transmission within buildings. However, it is generally not possible to penetrate masonry at these high frequencies. A respective radio base  
20 station must therefore be installed in every room in which a cordless communication is to be possible.

25 The informational brochure "Multimediakommunikation auf integrierten Netzen und Terminals" of the Technical University Braunschweig, Institute for Communications Technology, dated 14 August 1997, proposes that the power supply network be utilized for the data transmission within buildings.

GB-A-2 229 022 discloses a system wherein electrical devices connected to a power lead via data terminal devices can be remotely controlled by control data packets via a control unit likewise connected to the power lead or an infrared remote control, whereby the control data packets can comprise a size of up to 43 bytes given  
30 a maximum transmission rate of 9600 bits/s. To that end, the data terminal devices

are fashioned such that they can receive the control data packages either from the control unit via the power mains or via electromagnetic waves (infrared) via the infrared remote control.

5 An object of the present invention is to enable a cordless broadband communication within buildings and in the environment of buildings with optimally low installation outlay.

This object is achieved by the broadband communication system disclosed in claim 1 comprising a plurality of cordless communication devices connected to one

another for cordless communication with at least one communication terminal equipment within a communication cell, whereby the cordless communication devices are connectible to the power supply network and are fashioned for broadband data transmission via the power supply network. Developments and advantageous  
5 improvements of the inventive communication system are described in the subclaims.

Since power supply lines are usually present in every building, the invention thus allows a cordless broadband communication given the lowest possible installation outlay.

The cordless communication between the cordless communication devices  
10 and communication terminals can be implemented via radio, preferably at frequencies above 10 GHz.

Alternatively, the cordless data transmission between communication device or base station and respective terminal device can be implemented by infrared radiation. As a result thereof, the negative influence on electrical component parts  
15 present in the communication cell due to radio waves, which becomes greater with increasing frequency, is avoided. Due to its high intrinsic frequency, the infrared radiation enables a very broadband data transmission with up to several 100 megabits per second, 10 Mbit/s being thus unproblematically possible.

The data transmission can ensue with amplitude modulation via the infrared base band or by higher-grade, digital modulation methods (OFDM, CDMA).  
20

Infrared radiation in the wavelength range from 800 nm through 1000 nm can be employed for the data transmission, this being capable of being cost-  
beneficially produced by laser diodes or light-emitting diodes (LED). This frequency range, however, lies close to the visible range, so that certain intensity limits dare not  
25 be exceeded for protecting the eyes.

Another possibility is, for example, the wavelength range from 1200 nm through 1400 nm wherein the sensitivity of the eye is extremely low. Economical infrared sources in this frequency range are at their development stage.

In particular, the infrared source can be a vertical cavity surface-emitting  
30 laser. Semiconductor infrared detectors are suitable as infrared receiver, these working in the frequency range of the respective infrared source.

The communication system can comprise a control means (5) for controlling the communication between the individual communication devices or base stations, the control means can also serve the purpose of producing a connection to an external communication network, for example the telephone network or a broadband 5 TV cable network with coaxial cable, optical fiber cable or via a radio connection as well, what is referred to as a wireless local loop.

A communication cell can be formed by a room in a building such as a residence, an office building or a factory or can be formed by a garden or courtyard area in the environment of the building. The installed power supply network, for 10 example a 230 volt network or a 110 volt network, can be co-utilized for the data transmission between the cordless communication devices or base stations with one another.

Preferably, the cordless communication devices can be screwed into an incandescent bulb socket, as a result whereof the installation outlay is further reduced. 15 In order to nonetheless create the possibility of room illumination at the location where the cordless communication device is arranged, the cordless communication device can preferably comprise an additional socket.

The invention is explained below on the basis of a preferred exemplary embodiment with reference to the drawing, wherein the sole Figure 1 shows an 20 exemplary embodiment of the inventive broadband communication system.

By way of example, Figure 1 shows the application of the present invention to communication within a residential building. However, let it pointed out that the invention is definitely not limited to such applications. Of course, the communication cells can be rooms within an office building or can also be positioned 25 out of doors. It is important that a communication between the cordless communication device 1 and the communication terminal 2 is directly or indirectly possible, for example by reflection at walls, in every communication cell.

The cordless communication devices are schematically shown in the drawing and are referenced 1. This can thereby be a matter of a radio 30 transmitter/receiver that works at a frequency above 10 GHz, for example at 60 GHz. Preferably, the cordless communication device or the base station 1 can be a matter of

an infrared transmitter/receiver. The base stations 1 are arranged at the ceiling in the drawing, whereby some other arrangement is just as easily possible dependent on the shape of the room and the furnishings. For example, communication terminal devices 2 such as a television set or, respectively, a separate TV picture screen, a cordless 5 telephone or a cordless picture telephone, a lap top computer or a surveillance camera 2 are shown. The communication terminal devices 2 are respectively equipped with a communication interface that enables a transmission to the respective base station 1 via radio or via infrared. When, for example, the user moves with his mobile telephone 2 from one room into a neighboring room or when he goes out into the 10 garden, then an automatic handover between the individual communication cells occurs.

The individual cordless communication devices 1 respectively comprise a mains plug via which the electrical power required for the operation is supplied and via which the broadband data transmission also ensues. As a result thereof, the 15 installation outlay required for installing the inventive communication system is reduced to "plugging" the base station 1 into the mains outlet.

Additionally, a control means of a head station 5 is provided that, as bus controller, distributes the data to the individual base stations 1 and also the handover. The control means 5 also produces the connection to external communication 20 networks such as the telephone network or a broadband TV cable network. This connection between control means 5 and external network can ensue via cable (coaxial cable, optical fiber cable, or what is referred to as "twisted pair" cable) or can also ensue via radio via what is referred to as a wireless local loop. In the latter instance, for example, an external directional antenna (not shown) can be arranged on 25 the roof of the building.

The base station 1 can be fashioned such that it can be screwed into a standard incandescent bulb socket. It is thus possible to install the base station at the ceiling of the room at lamp sockets where a beneficial radio or, respectively, infrared illumination of the communication cell or, respectively, of the room is possible. In a 30 particular embodiment, the base station can comprise an additional standard incandescent bulb socket, so that the base station can, for example, be screwed into

the ceiling incandescent bulb socket, whereby an incandescent lamp can in turn be attached to the base station.

The inventive broadband communication system enables a broadband cordless communication within buildings or in the environment of buildings, whereby  
5 the installation outlay is minimized.

**PATENT CLAIMS**

1. Broadband communication system comprising a plurality of cordless communication devices (1) connected to one another for cordless communication with at least one communication terminal (2) within a communication cell, whereby the cordless communication devices (1) are connectible to a power supply network and are fashioned for broadband data transmission via the power supply network (4).

2. Communication system according to claim 1, characterized in that the cordless communication devices (1) are fashioned for cordless data transmission via radio.

3. Communication system according to claim , characterized in that the cordless communication devices (1) are fashioned for cordless data transmission via infrared radiation.

4. Communication system according to claim 3, characterized in that the data transmission between cordless communication device (1) and communication terminal (2) ensues with amplitude modulation of the infrared base band.

5. Communication system according to claim 3, characterized in that the data transmission between cordless communication device (1) and communication terminal (2) ensues by higher-grade, digital modulation.

6. Communication system according to one of the claims 3 through 5, characterized in that the infrared radiation has a wavelength from 800 nm through 100 nm.

7. Communication system according to one of the claims 3 through 5, characterized in that the infrared radiation has a wavelength from 1200 nm through 1400 nm.

8. Communication system according to one of the claims 3 through 7, characterized in that the infrared source is a surface-emitting semiconductor laser (VCSEL).

9. Communication system according to one of the claims 1 through 8, 5 characterized by a control means (5) for controlling the data communication between the cordless communication devices (1).

10. Communication system according to claim 9, characterized in that the control means (5) produces a connection to an external communication network.

11. Communication system according to claim 10, characterized in 10 that the connection to the external communication network is produced with coaxial cable or optical fiber cable.

12. Communication system according to claim 10, characterized in that the connection to the external communication network ensues via a radio connection.

15 13. Communication system according to one of the claims 1 through 12, characterized in that the cordless communication devices (1) are fashioned for data transmission via a 230 volt or a 110 volt power supply network.

14. Communication system according to one of the claims 1 through 13 characterized in that a communication cell is formed by a room in a building.

20 15. Communication system according to one of the claims 1 through 14, characterized in that the cordless communication devices (1) can be screwed into an incandescent bulb socket.

16. Communication system according to claim 15, characterized in that a cordless communication device comprises its own incandescent bulb socket.

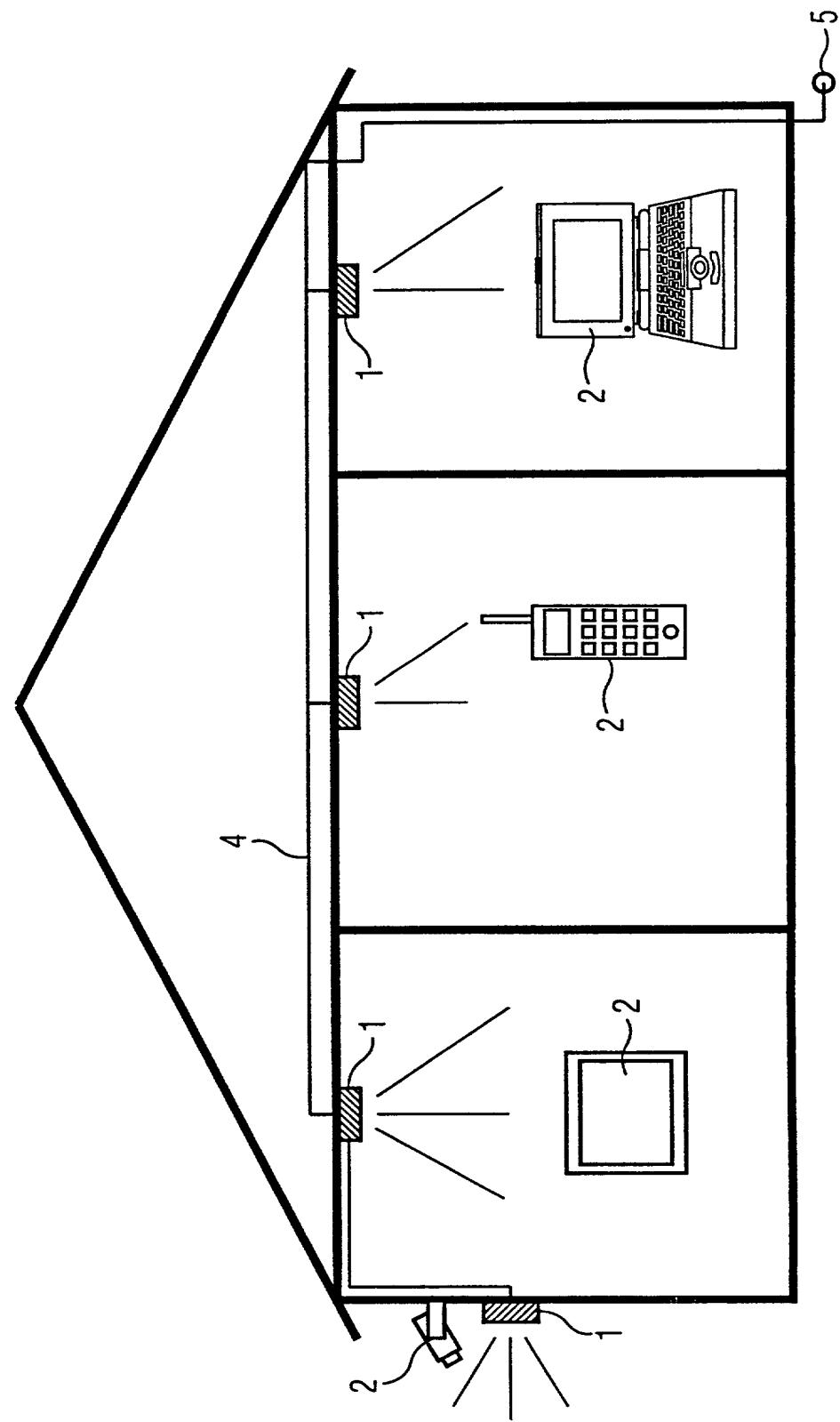
## **ABSTRACT**

## Broadband Communication System

A broadband communication system comprises a plurality of cordless communication devices (1) for cordless communication with at least one communication terminal (2), for example a cordless telephone, a television receiver or a lap top computer, within a communication cell. The cordless communication devices (1) are connectible to the power supply network of, for example, a building and are fashioned for broadband data transmission with the other cordless communication devices (1) and/or a control means (5) via the power supply network.

The cordless data transmission between cordless communication device or base station (1) and communication terminal (2) preferably ensues via infrared radiation. The invention enables a broadband cordless data transmission between various terminal devices (2) or from one terminal device to an external communication network given the lowest possible installation outlay.

1/1



**Declaration and Power of Attorney For Patent Application****Erklärung Für Patentanmeldungen Mit Vollmacht****German Language Declaration**

Als nachstehend benannter Erfinder erkläre ich hiermit  
an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine  
Staatsangehörigkeit den im Nachstehenden nach  
meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche,  
erste und alleinige Erfinder (falls nachstehend nur ein  
Name angegeben ist) oder ein ursprünglicher, erster  
und Miterfinder (falls nachstehend mehrere Namen  
aufgeführt sind) des Gegenstandes bin, für den dieser  
Antrag gestellt wird und für den ein Patent beantragt  
wird für die Erfindung mit dem Titel:

**Breitband-Kommunikationssystem**

deren Beschreibung

(zutreffendes ankreuzen)

hier beigelegt ist.

am \_\_\_\_\_ als

PCT internationale Anmeldung

PCT Anmeldungsnummer \_\_\_\_\_

eingereicht wurde und am \_\_\_\_\_

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmelde datum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

\_\_\_\_\_

the specification of which

(check one)

is attached hereto.

was filed on \_\_\_\_\_ as

PCT international application

PCT Application No. \_\_\_\_\_

and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

# German Language Declaration

Prior foreign applications  
Priorität beansprucht

Priority Claimed

198 20 760.3 - Germany - 08. Mai 1998 -  
(Number) (Country) (Day Month Year Filed)  
(Nummer) (Land) (Tag Monat Jahr eingereicht)

Yes Ja       No Nein

(Number) - (Country) - (Day Month Year Filed)  
(Nummer) - (Land) - (Tag Monat Jahr eingereicht)

Yes Ja       No Nein

(Number) - (Country) - (Day Month Year Filed)  
(Nummer) - (Land) - (Tag Monat Jahr eingereicht)

Yes Ja       No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.)  
(Anmeldeseriennummer)

(Filing Date)  
(Anmeldedatum)

(Status)  
(patentiert, anhängig,  
aufgegeben)

(Status)  
(patented, pending,  
abandoned)

(Application Serial No.)  
(Anmeldeseriennummer)

(Filing Date)  
(Anmeldedatum)

(Status)  
(patentiert, anhängig,  
aufgegeben)

(Status)  
(patented, pending,  
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgabe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

## German Language Declaration

**VERTRETUNGSVOLLMACHT:** Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt. (*Name und Registrationsnummer anführen*)

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (*list name and registration number*)

19-  
 Messrs. John D. Simpson (Registration No. 19,842) Lewis T. Steadman (17,074), William C. Stueber (16,453), P. Phillips Connor (19,259), Dennis A. Gross (24,410), Marvin Moody (16,549), Steven H. Noll (28,982), Brett A. Valiquet (27,841), Thomas I. Ross (29,275), Kevin W. Guynn (29,927), Edward A. Lehmann (22,312), James D. Hobart (24,149), Robert M. Barrett (30,142), James Van Santen (16,584), J. Arthur Gross (13,615), Richard J. Schwarz (13,472) and Melvin A. Robinson (31,870), David R. Metzger (32,919), John R. Garrett (27,888) all members of the firm of Hill, Steadman & Simpson, A Professional Corporation.

Telefongespräche bitte richten an:  
(*Name und Telefonnummer*)

Direct Telephone Calls to: (*name and telephone number*)

312/876-0200

Ext. \_\_\_\_\_

Postanschrift:

Send Correspondence to:

**HILL, STEADMAN & SIMPSON**  
**A Professional Corporation**  
85th Floor Sears Tower, Chicago, Illinois 60606

Voller Name des einzigen oder ursprünglichen Erfinders: <b>TASTO, Manfred</b>	Full name of sole or first inventor:
Unterschrift des Erfinders <i>Manfred Tasto 30/3/99.</i>	Datum Date
Wohnsitz <b>D-46397 Bocholt, Germany <i>DE</i> X</b>	Residence
Staatsangehörigkeit <b>Bundesrepublik Deutschland</b>	Citizenship
Postanschrift <b>Josef-Fehler-Str. 67</b>	Post Office Address
<b>D-46397 Bocholt</b>	
<b>Bundesrepublik Deutschland</b>	
Voller Name des zweiten Miterfinders (falls zutreffend): <b>ARETZ, Kurt</b>	Full name of second joint inventor, if any:
Unterschrift des Erfinders <i>Kurt Aretz</i>	Datum Date
Wohnsitz <b>D-46419 Isselburg, Germany <i>DE</i> X</b>	Residence
Staatsangehörigkeit <b>Bundesrepublik Deutschland</b>	Citizenship
Postanschrift <b>Märkische Str. 36</b>	Post Office Address
<b>D-46419 Isselburg</b>	
<b>Bundesrepublik Deutschland</b>	

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).